

# Office of Environmental Health Hazard Assessment



Matthew Rodriguez  
Secretary for  
Environmental Protection

George V. Alexeeff, Ph.D., D.A.B.T., Director  
Headquarters • 1001 I Street • Sacramento, California 95814  
Mailing Address: P.O. Box 4010 • Sacramento, California 95812-4010  
Oakland Office • Mailing Address: 1515 Clay Street, 16<sup>th</sup> Floor • Oakland, California 94612



Edmund G. Brown Jr.  
Governor

June 11, 2014

Carol D'Elia, Executive Director  
Little Hoover Commission  
925 L Street, Suite 805  
Sacramento, California 95814

Dear Ms. D'Elia:

## **The Purpose of CalEnviroScreen**

State law requires CalEPA and its boards and departments to provide fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies. Many low-income, minority, and indigenous communities bear a disproportionate burden of environmental pollution and its associated adverse health effects. The pollution can come from many different sources such as poor air quality, contaminated sites and polluted lakes and rivers. Yet the Agency and state laws primarily consider pollutants and exposures one at a time. CalEPA asked the Office of Environmental Health Hazard Assessment (OEHHA) to develop a tool that considers the combined effects of multiple pollutants on a community, rather than considering each pollutant in isolation from others. The Agency also requested that the vulnerability of a community to toxic pollution be adequately considered. For these reasons, OEHHA developed a science-based tool for evaluating multiple pollutants and stressors in communities, called the California Communities Environmental Health Screening Tool (CalEnviroScreen). The first version of CalEnviroScreen was released in April 2013, and a draft Version 2.0 was released for public comment in April 2014. This current draft version of CalEnviroScreen incorporates the most up-to-date information and refines the tool by incorporating drinking water exposures and using census tracts as the geographic scale (rather than Zip codes, which were used in the first version).

The tool assists CalEPA and its boards and departments in planning and decision-making. Some areas include providing environmental justice small grants, promoting greater compliance with environmental laws, prioritizing site-cleanup activities and

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California Environmental Protection Agency

Sacramento: (916) 324-7572 Oakland: (510) 622-3200

[www.oehha.ca.gov](http://www.oehha.ca.gov)

identifying opportunities for sustainable economic development in heavily impacted neighborhoods.

### **Capabilities**

CalEnviroScreen uses a science-based method for evaluating multiple pollution sources in a community while accounting for a community's vulnerability to pollution's adverse effects. The tool is based on 19 indicators of environmental, health, and socioeconomic conditions. Some of the indicators provide information of current or potential exposures to pollution such as ozone, particulate matter, diesel particulate, pesticides, toxic releases from facilities, motor vehicle exhaust, and drinking water contaminants. Other indicators of pollution burden consider environmental degradation in a community as a result of the presence of cleanup sites, groundwater threats, impaired water bodies, solid waste sites and facilities, and hazardous waste facilities and generators. To consider the population vulnerabilities, CalEnviroScreen includes indicators for the presence of children and elderly, the number of emergency room visits due to asthma, and the number of low birth weight infants, as well as information on poverty, unemployment, educational attainment, and inability to speak English well.

The information is tabulated and scored at the census tract scale on a range of 1 to 100. Relative comparisons can be made among different areas. If you wish to learn more about CalEnviroScreen visit the following website:  
<http://oehha.ca.gov/ej/ces2.html>.

### **Use of CalEnviroScreen**

The original intent of the tool was for use by CalEPA and its boards and departments in budgeting scarce resources for cleanup and abatement projects, promoting compliance with environmental laws, and administering environmental justice grants. Additionally, CalEnviroScreen helps to guide boards and departments when planning their community engagement and outreach efforts. Knowing which areas of the state have higher relative environmental burdens has assisted efforts to improve compliance with environmental laws in disproportionately impacted areas, and has provided CalEPA programs with additional insights on the potential implications of their activities and decisions.

The development of CalEnviroScreen was transparent and included substantial input from scientists, CalEPA stakeholders and the public. The public process included written public comment periods and workshops held throughout the state, particularly in communities with the kinds of pollution burden and vulnerability issues that are a focus of the tool. Scientific input occurred through a scientific workshop and by extensive consultation with the University of California and other California colleges. A CalEPA stakeholder advisory group with representatives from industry, academia, regional government agencies and environmental justice groups met on several occasions to provide input and feedback. The information and discussions shaped the tool. For example, many commenters on the original version of CalEnviroScreen suggested a

drinking water indicator and information at the census tract level, which occur in the current 2.0 CalEnviroScreen version. Throughout these discussions it was clear that local agencies and community groups wanted to use the tool as well. For this reason, OEHHA made extensive efforts to provide an online tool with extensive documentation and options to enable local entities to understand how the tool works and use it appropriately.

Since the initial development of CalEnviroScreen two additional uses have been identified.

- a. *Implementation of SB 535:* In 2012, Senate Bill 535 (De León, Chapter 830, Statutes of 2012) was signed into law and required that 25 percent of proceeds from the state's Greenhouse Gas Reduction Fund be spent on benefiting disadvantaged communities, and that 10 percent be invested in projects located within those communities. CalEPA is required to identify disadvantaged communities based on geographic, socioeconomic, public health and environmental hazard criteria. Since CalEnviroScreen has been developed based on similar criteria, it is well suited for the purposes described by SB 535.
- b. *Strategic Growth Council:* The first use of CalEnviroScreen outside of CalEPA was by the Strategic Growth Council. The Strategic Growth Council used the tool as one factor in allocating community grants.

**Has this information changed the way the state measures environmental justice outcomes related to health?**

As an important first step to assuring that all Californians have access to environmental justice, it is necessary to identify the areas of the state that face multiple pollution burdens so programs and funding can be targeted appropriately toward improving the environmental health and economic vitality of the most impacted communities. CalEnviroScreen performs this function. Prior to CalEnviroScreen, some heavily burdened communities attracted public attention due to activism and in some cases their location in major media centers, while other equally burdened communities remained largely invisible. For the first time, California now has an objective, scientific tool for systematically comparing pollution burdens and vulnerabilities in urban and rural communities throughout the state.

CalEnviroScreen is still a new tool, and it therefore is premature to attempt to measure its impact on California. As policymakers learn to use CalEnviroScreen, they will be able to better allocate resources to communities based on environmental health conditions. To ensure that state and local agencies and other interested groups understand and utilize CalEnviroScreen properly, CalEPA has provided guidance for its use. At the same time, OEHHA and CalEPA view CalEnviroScreen as a work in progress that will be continuously improved and refined. One of our long-term goals is to enhance the indicators that provide a measure of health conditions in communities.

This will require identifying meaningful public-health data that is statewide but available at the census-tract level.

**Changed or refined the questions the state asks about serving those living in the most disproportionately burdened communities.**

As stated above, CalEnviroScreen is a new tool, and policymakers are still learning how to utilize the information that it provides. The main objective of CalEnviroScreen is to provide a broad comparison of communities throughout California based on their overall pollution burdens and vulnerabilities. However, information provided by individual indicators enables policymakers and others to focus on specific kinds of environmental burdens. For example, some water agencies have expressed interest in using information from the new drinking water indicator currently in the draft CalEnviroScreen 2.0 to allocate resources to economically disadvantaged communities with poor drinking water quality. Similarly, some local air districts may want to use CalEnviroScreen to focus on economically disadvantaged communities with poor air quality. Selective use of indicators makes this possible. While it may be important for larger entities like CalEPA to base decisions on burdens and vulnerabilities of all kinds of pollutants, agencies with a local or media-specific focus may better inform their decisions by considering indicators on socioeconomic conditions and sensitive populations along with indicators of the particular kinds of pollution that are of most interest to them. There has been considerable interest expressed at the local and regional level in creating regional CalEnviroScreen maps that compare communities within specific regions of the state. OEHHA and CalEPA are currently considering comments regarding the value of developing regional maps.

**Changed the state's approaches to ensuring that services are available to communities in need.**

This question is beyond the scope of OEHHA's responsibilities, which are focused on the development of CalEnviroScreen. In addition, the Legislature, the Strategic Growth Council, and other entities are only just beginning to make decisions based on information provided by CalEnviroScreen. Over the next several years, it should be possible to see the impact that CalEnviroScreen has had in the allocation of resources and services to needy communities.

**Changed how the state defines and measures success.**

The Agency, the Legislature, the Strategic Growth Council, and other entities are only just beginning to make decisions based on information provided by CalEnviroScreen. Currently, CalEnviroScreen only provides for a relative comparison of pollution burdens and vulnerabilities among communities as a snap shot, but cannot track a community's progress over time in addressing pollution issues. In the long term, OEHHA is interested in the possibility of enabling CalEnviroScreen to track environmental health trends in communities throughout the state. In order to measure success of reducing the pollution impacts on disadvantaged communities it will be important to continue collecting information over the next several years on available indicators so that

comparisons could be made. Such a measure could be developed but it is beyond the scope of our project and beyond our available resources for CalEnviroScreen.

**Attempts to combine our data with data from the DPH or other state agencies to create a more comprehensive and transparent visualization of public health needs in California?**

The Department of Public Health has been an important contributor to CalEnviroScreen. The Department assisted us in developing the indicators for drinking water quality, traffic density, asthma emergency room visits, and low birth weight in infants. We are also working with them to update the indicators and identify other possible indicators.

*Drinking Water Quality:* Californians receive their drinking water from a wide variety of sources and distribution systems. Drinking water quality varies with location, water source, treatment method, and the ability of the water purveyor to remove contaminants before distribution. Because water is universally consumed, drinking water contamination has the potential for widespread effects on health. This has been demonstrated in numerous episodes of water supply contamination by chemical leaks and releases.

SOURCE: Drinking Water Systems Geographic Reporting Tool, California Environmental Health Tracking Program, California Department of Public Health (CDPH) [http://www.ehib.org/page.jsp?page\\_key=61](http://www.ehib.org/page.jsp?page_key=61)

*Traffic Density:* While California has the strictest auto emissions standards in the U.S., the state is also known for its freeways and heavy traffic. Traffic is a significant source of air pollution, particularly in urban areas, where more than 50 percent of particulate emissions come from traffic. Exhaust from vehicles contains a large number of toxic chemicals, including nitrogen oxides, carbon monoxide, and benzene. Traffic exhaust plays a role in the formation of photochemical smog that contributes not only to regional pollution, but also to localized impacts for people living nearby. Health effects of concern from these pollutants include heart and lung disease, cancer, and increased mortality.

SOURCE: Traffic Volume Linkage Tool, California Environmental Health Tracking Program (CEHTP) Environmental Health Investigations Branch, California Department of Public Health CDPH)

*Asthma Emergency Room Visits:* Asthma is a chronic lung disease characterized by episodic breathlessness, wheezing, coughing, and chest tightness. While the causes of asthma are poorly understood, it is well established that exposure to traffic and outdoor air pollutants, including particulate matter, ozone, and diesel exhaust, can trigger asthma attacks. Nearly three million Californians currently have asthma and about five million have had it at some point in their lives. Children, the elderly and low-income Californians suffer disproportionately from asthma (California Health Interview Survey, 2009). Although well-controlled asthma can be managed as a chronic disease, asthma

can be a life-threatening condition, and emergency department visits for asthma are a very serious outcome, both for patients and for the medical system.

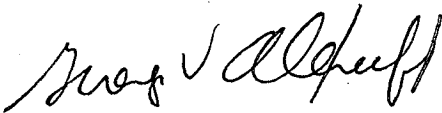
SOURCE: California Office of Statewide Health Planning and Development (OSHPD) California Environmental Health Tracking Program (CEHTP) Environmental Health Investigations Branch, California Department of Public Health (CDPH).

*Low Birth Weight in Infants:* Infants born weighing less than 2,500 grams (about 5.5 pounds) are classified as low birth weight (LBW), a condition that is associated with increased risk of later health problems as well as infant mortality. Most LBW infants are small because they were born early. Infants born at full term (after 37 complete weeks of pregnancy) can also be LBW if their growth was restricted during pregnancy. Nutritional status, lack of prenatal care, stress, and maternal smoking are known risk factors for LBW. Studies also suggest links with environmental exposures to lead, air pollution, toxic air contaminants, traffic pollution, pesticides, and polychlorinated biphenyls (PCBs). These children are at risk for chronic health conditions that may make them more sensitive to environmental exposures after birth.

SOURCE: California Department of Public Health (CDPH)

I hope this answers your questions and I look forward to additional discussions later this month.

Sincerely,



George V. Alexeeff, Ph.D.

Director

Office of Environmental Health Hazard Assessment

Enclosure

cc: Arsenio Mataka  
Assistant Secretary  
California Environmental Protection Agency